

REMARKS

In the Office Action dated July 27, 2005, typographical errors in the specification were noted, which have been corrected.

The Examiner also noted that Reference AT (Patent Abstracts of Japan) listed on Form 1449, attached to the Information Disclosure Statement filed on January 23, 2004, was not attached to that Information Disclosure Statement. The inclusion of Reference AT on Form 1449 was due to a word processing oversight, and that reference is not relevant to the subject matter of the present application.

Claims 1, 10, 12-15 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Belt et al. This rejection is respectfully traversed for the reasons discussed below.

Applicant notes with appreciation that claims 2-9, 11 and 16-18 were stated to be allowable if rewritten in independent form, however, in view of Applicant's traversal of the rejection of the independent claims, those claims have been retained in dependent form at this time.

An important feature of each of independent claims 1 and 15 is that the first group coupler antenna part (of the first antenna group) and the second group coupler antenna part (of the second antenna group) are inductively coupled with each other to form a common boundary antenna element of the first and second antenna groups, this common boundary antenna element being inductively decoupled from at least one first group antenna element in the first antenna group, and from at least one second group antenna element in the second antenna group.

The Examiner has relied on Figure 2A in the Belt et al. reference as disclosing such an arrangement. The Examiner has stated that the antenna loops 45a and 45b

correspond to the first antenna group of the claims, and the antenna loops 50 and 51 correspond to the claimed second antenna group. The Examiner further stated that coils 46, 47, 48 and 49 correspond to the aforementioned coupler antenna parts.

Applicant respectfully disagrees with this correlation of the elements shown in Figure 2A with the elements of independent claims 1 and 15 of the present application. As can be clearly seen from the side view, in Figure 2B, of the antenna arrangement shown in Figure 2A, the coils 44 and 45 form one group that are mechanically connected together, by virtue of being in the same housing (as shown in Figure 3), and the coils 46, 47 and 48, 49 and 50, 51 form a second group that are mechanically connected together by virtue of being in another, separate housing, also shown in Figure 3. It is therefore purely arbitrary, and inconsistent with the teachings of the Belt et al. reference, to associate the coils 46 and 47 with the first antenna group, as the Examiner has done in order to substantiate the rejection under 35 U.S.C. §103(a).

Moreover, as can also be clearly seen in Figure 2B, the coil 45 is physically spaced from the coils 46 and 47, and this is consistent with the conventional technique described in the Belt et al. reference with regard to the prior art, at column 1, lines 45-50. Such spacing is explicitly stated at that location to be conventionally for the purpose of causing the surface coils to have “substantially no interaction with all adjacent surface coils.” The arrangement of the coils shown in Figure 2B of the Belt et al. reference, therefore, is clearly for the purpose of causing the two coil groups, respectively contained in separate housings, to be inductively *decoupled* from each other, by contrast to the language of claims 1 and 15, wherein the

common boundary antenna element inductively *couples* the first and second antenna groups.

In this regard, the Belt et al. reference teaches no more than the prior art described in Figure 1 of the present application, wherein antenna groups are arranged that simply overlap each other. The disadvantages associated with such a conventional arrangement are described in the present specification in the paragraph bridging pages 3 and 4, and in the paragraph on page 4 following that bridging paragraph.

The Belt et al. reference, therefore clearly does not disclose first and second antenna groups with respective group coupler antenna parts that interact with each other to form a common boundary antenna element that inductively couples the first and second antenna groups, as set forth in claims 1 and 15. Moreover, in order to modify the Belt et al. reference in order to conform to the language of claims 1 and 15 in conformity with the Examiner's statements, it would be necessary to physically remove the coils 46 and 47 from the housing in which they are contained and place them in the separate housing in which the coil 45 is contained. This would defeat the purpose of the Belt et al. arrangement of having one coil group (composed of coils 44 and 45) for imaging the thigh and knee region, and another, separate coil group (composed of coils 46, 47, 48, 49, 50 and 51) for imaging the calf, ankle and foot region.

Moreover, the table shown in Figure 18 of the Belt et al. reference, for operating the individual coil groups, clearly places the coils 46 and 47 in a group that is separate and distinct, and is operated independently of, the group that contains the coil 45.

Claims 1 and 15, therefore, would not have been obvious to a person of ordinary skill in the field of magnetic resonance imaging coil design, based on the teachings of Belt et al., under the provisions of 35 U.S.C. §103(a). Claims 10 and 12-14 add further structure to the non-obvious combination of claim 1, and claim 19 adds further structure to the non-obvious combination of claim 15, and therefore those dependent claims would not have been obvious to a person of ordinary skill based on the teachings of Belt et al., for the same reasons discussed above in connection with the independent claims.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

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